IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of: Jacques J. LABRIE

Serial No.: 09/221,542 Group Art Unit: 2161

Filed: December 28, 1998 Examiner: Susan Y. Chen

For: **DATA NAVIGATION SYSTEM AND METHOD EMPLOYING DATA TRANSFORMATION LINEAGE MODEL**

Attorney Docket No.: ST9-98-004
(STL919980004US2)

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REPLY BRIEF

Under 37 C.F.R. § 41.41

This is a Reply Brief in connection with the above identified Appeal and is responsive to the Examiner's Answer mailed from the U.S. Patent and Trademark Office on July 27, 2007. Appellant respectfully requests consideration of the arguments presented below, a reversal of the Examiner's rejections, and an allowance of all pending claims.

I. Real Party in Interest

The Examiner and Appellant agree that the real party in interest is International Business Machines Corporation by way of an Assignment recorded in the U.S. Patent and Trademark Office on December 28, 1998 at Reel 9680, Frame 0832.

II. RELATED APPEALS AND INTERFERENCES

The Examiner and Appellant agree that there are no prior or pending appeals, interferences or judicial proceedings, known to appellant, appellant's representative, or assignee, that may be related to, or which will directly affect or be directly affected by or have a bearing upon the Board's decision in the pending Appeal.

III. STATUS OF CLAIMS

The Examiner and Appellant agree that:

Claims 1-28 are on appeal;

Claims 1-28 are pending;

None of the claims have been allowed;

None of the claims were objected to only for being dependent from a rejected base claim, but are otherwise allowable;

Claims 1-28 are rejected;

None of the claims have been withdrawn from consideration; and,

None of the claims have been canceled.

IV. STATUS OF AMENDMENTS

The Examiner and Appellant agree that no amendments were tendered to the pending claims after the final rejection in the Office Action mailed May 26, 2005, and that a Response was filed by Appellant on August 26, 2005 by telefacsimile transmitted to the United States Patent and Trademark Office on August 26, 2005 to facsimile number (571) 273-8300, but Appellant was not favored with a response from the Patent Office in the form of an Advisory Action or any other paper.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The Examiner and Appellant agree that the Summary of Claimed Subject Matter as set out in the Appeal Brief is correct.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The Examiner and Appellant agree that the following grounds of rejection are presented for review:

Claims 1-28 stand rejected as anticipated under 35 U.S.C. § 102(b) by U.S. Patent No. 5,315,709 to Alston, Jr., et al., and that the issues presented on Appeal are as follows:

1. Whether claims 1-18 are unpatentable under 35 U.S.C. § 102(b) over Alston, Jr., et al.

2. Whether claims 19-27 are unpatentable under 35 U.S.C. § 102(b) over Alston, Jr., et al.; and

3. Whether claim 28 is unpatentable under 35 U.S.C. § 102(b) over Alston, Jr., et al.;

VII. ARGUMENTS

Appellant contests the rejection of claims 1-28 as being anticipated under 35 U.S.C. § 102(b) by U.S. Patent No. 5,315,709 to Alston, Jr., et al.

Appellant respectfully submits the arguments below.

A. Background

The Alston patent teaches a system and apparatus for simply transforming objects in a first data model (source design objects-SDOs) to objects in a second data model (target design objects-TDOs) and synchronizing the two data models. In the preferred embodiment described, the first data model is an extended entity model and the second data model is a relational data model. In the Alston patent, the objects in the first and second data models are the same data, merely transformed. Further in Alston, the only action described with regard to the source design objects (SDOs) and target design objects (TDOs) is a synchronizing process for use between the two data models.

In support of Appellant's description of Alston above, it is respectfully submitted that the specification of Alston at column 9, lines 44-57 describes that:

> ...it is a design goal of the current invention to generate, modify, and maintain parallel data models in each of the two design spaces, for example, an Analyst design in the first design space and a DB2 design in the second design space, where the two designs correspond to the same data, or information in a synchronized manner. To maintain flexibility for the user, the system of the invention permits modifications of the two designs by allowing a user to independently modify one or both of the designs during predetermined time intervals, and then following each such interval, synchronize the resultant divergent designs, so that they again correspond to the same data. (emphasis added)

Thus, overall, the method and apparatus taught in the Alston patent is not at all concerned with providing users with information about source data from which target

data objects were derived via a transformation performed on the source data to derive the target data object as in the claimed invention of the present application. Rather, the system taught in Alston is concerned with synchronizing a pair of different data models. In addition, it is to be understood that the operations by a user on the models are performed independently. As set out in Alston at column 4, lines 48-53 "[t]o achieve synchronization following periods of independent operations on models in each of two design spaces, the objects in the source design space are each transformed to merged objects in accordance with the invention prior to further independent processing."

Figure 1C of Alston shows a simplified view of the separate and distinct nature of the first and second data models 52, 62 in separate first and second design spaces 50, 60, respectively. In the system taught there, upon the establishment of a user of a data model in one design space, it may be desirable to establish a data model in another design space which corresponds to the same information. The system addresses the event when user interaction with one or both of the data models occurs which modifies one of the respective data models so that the data models are no longer in correspondence with a common information set. In those circumstances, it is desirable to transform or translate a resultant model in its space to the other model in the other space. This process is referred to as "engineering" in the Alston patent.

It is to be noted that the user's modification to the objects in the first data model are not stored or otherwise made a part of a lineage information relating to the data. In Alston information on the modifications to the underlying data is lost and only the modified object itself is saved for use in the first data model and for use in synchronizing the objects in the second data model to conform with the modified object(s) in the first data model. Also, in Alston, the synchronizing of the objects in the second data model based on modification of objects in the first data model does not result in any information on the modification available for presentation to the user. When objects in the first data model are modified, the objects in the second data model are "synchronized" and thus changed/transformed, but no information on the transformation itself is made available to the user. One reason for this is that in Alston, although the pair of data models may be different, the underlying information set is the same. Therefore, there is no utility in Alston of providing information about source data from which target data objects were

derived via a transformation performed on the source data to derive the target data objects. In Alston, operations are performed on source objects in the source design space. The target design space contains objects which have been transformed from the source design space. More particularly, as described at column 8, lines 64-68:

> An important aspect of the invention is to achieve synchronization of two designs in their respective design spaces (that is, to establish that both models correspond fully to the same information set). Either model may be "synchronized" to the other.

Again, as described in the Alston patent beginning at column 9, line 45, it is a design goal to generate, modify, and maintain parallel data models in each of two design spaces, for example, an Analyst design in the first design space and a DB2 design in the second design space, where the two designs correspond to the same data, or information in a synchronized manner. To maintain flexibility for the user, the system of Alston permits modifications of the two designs by allowing a user to independently modify one or both of the designs during predetermined time intervals, and then following each such interval, synchronize the resultant divergent designs, so that they again correspond to the same data.

Thus, the method and system taught in Alston does not provide information about source data from which target data objects were derived via a transformation performed on the source data. Rather, the system simply coordinates or "synchronizes" parallel data models in each of two design spaces. Information on "generations" of modified data or on the synchronizing transformation is not saved or otherwise made available to the user.

In addition to the above, the data models are separate and distinct and reside in two separate design spaces in Alston. Synchronization is performed in Alston following periods of independent operations on the models in each of the two design spaces. (column 4, lines 48-53). The Alston disclosure does not teach or suggest navigating a plurality of data objects stored in an information catalog.

B. Claims 1-18 are not anticipated by Alston, Jr., et al.

Independent claim 1 recites a method of navigating data stored on a data storage device connected to a computer, comprising the steps of: in response to receiving input from a user navigating a plurality of data objects stored in an information catalog, selecting a target data object in the information catalog; and providing information about source data from which the target data object was derived via a transformation performed on said source data to derive said target data object.

Similarly, independent claim 7 recites an apparatus for navigating data, comprising: a computer having a memory and a data storage device coupled thereto that stores the data in an information catalog; and one or more computer programs, performed by the computer, for, in response to receiving input from a user navigating the data stored in the information catalog, selecting a target data object stored in the information catalog and providing information about source data from which the target data object was derived via a transformation performed on said source data.

Similarly, independent claim 13 recites an article of manufacture comprising a program storage medium readable by a computer and embodying one or more instructions executable by the computer to perform method steps for navigating data stored in an information catalog on a data storage device, the method comprising: in response to receiving input from a user navigating a plurality of data objects stored in the information catalog, selecting a target data object stored in the information catalog, the target data object being derived by a transformation performed on source data; and providing information about the source data from which the target data object was derived.

The Examiner has rejected all pending claims under 35 U.S.C. § 102(b) as being anticipated by the Alston patent. This rejection, however, is traversed. It is well-established that to be anticipatory, a reference must disclose each and every claim limitation. Alston fails to disclose each and every element of the rejected claims.

Figure 6 of Alston simply illustrates the processing of partnership sets (PSETS) which, as set out at column 17, lines 45-47, are essentially relationships between

entities. The partnership and the two PSETS associated with it constitute the processing unit. All PSETS are either translated into a Foreign Key, two Foreign Keys, or a Reference Table and two Foreign Keys and a Primary Key depending on the type of partnership, i.e., on-to-one, one-to-many, many-to-many. In Figure 6, the example PARENT entity 152 in the extended entity model is "CLASS." The CHILD entity 154 is "STUDENT." Those entities 152 and 154 are shown in the relational model or Table "CLASS" 162 and Table "STUDENT" 164. Thus, in Alston, there is an identity of entities (through synchronization) across the pair of model spaces (extended entity and relational DB), the entities being simply represented differently in the respective design spaces.

Alston fails to teach navigating data, receiving input from a user selecting a target data object, and providing information about source data from which the target data object was derived via a transformation performed on the source data to derive the target data object.

The Examiner continues to take the position in the record that Alston discloses a computer system with means/methods/computer program product to perform the functions as claimed by Appellant comprising: a computer having a memory, and a data storage device coupled thereto that stores data; one or more computer programs, performed by the computer, for, in response to receiving user input, selecting a target object in an information catalog and providing information about a source data from which the target object was derived via a transformation performed on contents of the source data; a plurality of objects including a target object wherein the target object was derived from one or more transformations of one or more sources of data; a transformation lineage system which stores transformation lineage information for the target object, the transformation lineage information associating the target object with the one or more transformations and identifying the one or more data sources; a user interface for receiving user input for selecting one of the plurality of objects; wherein, the user interface configure (sic) to display the transformation lineage information in response to receiving user selected input.

The Examiner, in a "Response to Arguments" section of the final Office Action as well as in the Examiner's Answer took the position that Alston clearly discloses a graphical user interface that allows users to navigate and transform objects in a first data model to objects in a second data model.

With regard to this position, Appellant respectfully submits that although Alston discloses a graphic user interface and the transformation of objects in a first data model to objects in a second data model, it falls short of receiving input from a user navigating data objects stored in an information catalog selecting a target data object in the information catalog and providing information about source data from which the target data object was derived via a transformation performed on the source data to derive the target data object. Rather, the system taught in Alston is a "moving forward" system wherein objects are transformed from a first data model to a second data model and, upon changes to objects in the first data model, corresponding changes or "synchronization" modifications are made to objects in the second data model. The Alston system does not permit providing information about source data from which a selected target data object was derived via a transformation performed on the source data.

Next, it is respectfully reiterated that the Examiner misunderstood Appellant's argument made earlier with regard to the differences between "navigating" data and "synchronizing" data. The Examiner has previously stated in the record that she did not assert or imply that navigating data is the same as synchronizing data. Appellant agrees with this position. Navigating data is not the same as synchronizing data. To that end, it is to be pointed out that the independent claims in the pending application relate to navigating data and not synchronizing data. The recited limitation clearly is directed to a user navigating data. The Alston patent, in contrast, teaches a synchronizing of data.

The Examiner has now taken the position on page 9 of the Examiner's Answer that Alston provides:

> a display device (e.g., the unit 12, Fig. 1B) with Graphic User Interface (GUI) as shown by Fig. (s) 5A-8, that receives inputs from a user by selectively navigating mapped data objects of the user interface (e.g., by using the selectable map information

> entities/objects of Fig. 5A) such that the system is subsequently configured to retrieve, display the source objects into target designing spaces in form of parent/child entity relationship set by the system during analyzing or editing (e.g., Fig. 7-8 and associated texts).

Appellant respectfully submits that the Examiner has misinterpreted the teachings of Alston, particularly with respect to the ability of the system taught there to "selectively navigate mapped data objects" and to "retrieve, display the source objects into target designing spaces" based on the inputs from the user. Figure 5A of Alston shows a form 500 used to specify or enter information by a user of the system relating to a user map in a DB2 model. Simply, the form 500 of that figure accepts information from the user to specify a user map in the DB2 data model. It is a data entry form. Similarly, Figure 5B of Alston shows a form 502 used to specify or enter information by a user relating to a user map in an analyst data model. This form 502, like the DB2 form 500 is simply a template for entering information in the system of Alston.

Data entry into forms, e.g., 500, 502, is not "navigating a plurality of data objects stored in an information catalog "as specified in claim 1 of the present application, for example. The forms of Figures 5A and 5B of Alston are not used to "select a target data object in the information catalog" "in response to receiving input from a user navigating" the data objects stored in the information catalog. These limitations are set out in the claims, e.g., claim 1 and have no corresponding description in Alston.

Lastly in the Examiner's Answer, the Examiner alleged that Appellant did not point out the patentable novelty which he thinks are recited in the claims. However, as an example, independent claim 1 recites a method of navigating data stored on a data storage device comprising selecting a target data object in an information catalog and providing information about source data from which the target data object was derived via a transformation performed on the source data to derive the target data object. The target data object is selected in response to receiving input from a user navigating a plurality of data objects stored in the information catalog. Appellant relies upon the recitations contained in the independent claims pending in this application.

The burden is on the Examiner to show anticipation of the claimed subject matter. A claim is anticipated only if each and every element as set forth in the claim is found,

either expressly or inherently described, in a single prior art reference. Verdegaal Bros. Inc. v. Union Oil Co., 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir.), cert. denied, 484 U.S. 827 (1987). The inquiry as to whether a reference anticipates a claim must focus on what subject matter is encompassed by the claim and what subject matter is described by the reference. As set forth by the court in Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 772, 218 USPQ 781, 789 (Fed. Cir. 1983), cert. denied, 465 U.S. 1026 (1984), it is only necessary for the claims to "'read on' something disclosed in the reference, i.e., all limitations of the claim are found in the reference, or 'fully met' by it." The Examiner has not demonstrated a one-to-one correspondence between each limitation contained in the claims and the teachings of Alston. Rather, the Examiner has listed citations to portions of Alston and characterized these and other portions of Alston but without relating these citations and characterizations to the claims pending in the instant application or required to show anticipation.

The Examiner previously asserted that Alston discloses the transformation of the source data to derive the target object via keys, citing col. 17, line 45 – col. 18, line 20, and Fig. 6. The Examiner further asserted that the split screen provides information about source (152 in Fig. 6) from which a target object (154 in Fig. 6) was derived.

Appellants respectfully traversed the Examiner's position regarding these teachings of Alston previously. The Examiner misunderstood and misinterpreted Fig. 6 and the cited columns of Alston. Appellant has provided remarks and clarifications with regard to Fig. 6 above.

The Abstract of Alston simply describes synchronization of two data models i.e., source design objects and target design objects. However, the target and design models (52 and 62 in Fig. 1B and 1C, col. 8, lines 26-34) are not collections of data from the DB2 database 46 but, rather definitions of different views of the data objects in the database 46. To clarify this further, quoting from col. 1, lines 23-31, "The implementation of an information management system utilizing database management technology involves the concept of dual data representation: i.e., logical representation; and physical representation. Logical representation relates to the form in which the data records are presented to and interact with the system user. Physical representation relates to the form in which individual data records are stored and how the records are manipulated by

the computer system." Alston only discloses one source for data objects, namely the DB2 catalog 46 which is viewed differently by different users, e.g., an Entity-Relationship (E-R) type of data model versus a relational model where the objects are represented by tables and associated columns (col. 1, line 65 – col. 2, line 8).

The transformations disclosed in Alston relate to design object transformations (Abstract), rather than target data transformations as described in the present application. For example, Alston describes a first data model as an extended entity data model and a second data model as a relational data model, and the objects being transformed are design objects, not data objects (col. 4, lines 28-40). The data models are used to interact with the database 46 via the SQL file 16 (col. 7, line 64 – col. 8, line 6).

With regard to synchronization, Alston teaches synchronization of the data models in the design spaces 50 and 60 (col. 9, lines 58-68), but is silent with regard to synchronization of target data because there is only one source for target data, namely the database 46, and no synchronization is needed.

With reference to Fig. 6 of Alston, the Examiner cited this as an example of transformation of source data, however, Alston is only describing processing the relationship between entities as objects (col. 17, lines 45-47), and there is no suggestion of navigating data targets in the DB2 database 46. Nor is there any suggestion in Alston that the data in the database is transformed; only the design by which the data is accessed is transformed, either from an extended entity model to a relational model (forward engineering), or vice versa (reverse engineering), as defined in col. 2, lines 17-28.

As opposed to Alston, however, the present application allows a user to access data derived from any number of database sources on one or more data processing nodes (page 5, lines 26-29). The information catalog system permits users to find what data is available in their environment, and to organize the data in the information catalog system, and to access the data itself when needed (page 5, lines 19-25). Because the information catalog system enables users to determine what information should be captured as warehouse data, what it is called, and how it is organized, a transformation lineage model is provided as a mechanism to advantageously enable a user to

determine the lineage of the warehouse data by traversing a transformation model. The system allows users to select any data that they want to access, which can be anywhere on a tree. If the users have questions about how the data they are looking at was derived, the users can navigate the information catalog via the tree structure to see any "transformations" that were applied to generate the data. Alston does not teach any such transformations of data, but rather, only the transformation of one design model to another which is unrelated to target data transformations. A user may access the data in the database 46 of Alston by either of the disclosed design models, but there is no suggestion or teaching that the data itself is transformed, let alone a teaching that the user may view information about how the data was transformed.

In addition to the above, the system in Alston is not responsive to input from users navigating a plurality of objects to provide information about source data from which the selected target data object was derived. Rather, simply, the system of Alston synchronizes parallel data models in each of two design spaces and merely enables the user to view the relationships between the design objects in different design spaces. This is set out in Alston at column 11, beginning at line 22. To that end, Alston simply provides maps in association with the objects in the source and design spaces. The maps serve to enable users to drive the forward or reverse engineering, to view the relationships between the design objects in the different design spaces, and to synchronize the two data models. However, Alston falls short of providing information about the source data from which the selected target data object was derived via a transformation. The system of Alston simply enables user to view the relationship between design objects and different design spaces. The objects are simply set out in a side-by-side display such as shown in Figure 3A. No information about the source data is displayed, only that source data exists.

In addition to the above, the system of Alston does not at all provide transformation information which is information about the transformation performed on the source data to derive the target data. This is clearly recited in claims 3, 9, 15, 22, and 26.

For at least the above reasons, and particularly because the subject independent claims 1, 7, and 13 clearly include the limitation of navigating data and providing

information about source data from which target data was derived via a transformation performed on the source data to derive the target data, it is respectfully submitted that the Alston, Jr. '709 patent does not teach, suggest, or fairly disclose the invention recited in these pending claims. Claims 2-6 depend from claim 1, claims 8-12 depend from claim 7, and claims 14-18 depend from claim 13.

A withdrawal of the rejection of claims 1-18 over this prior art patent and allowance of claims 1-18 is respectfully requested.

C. Claims 19-27 are not anticipated by Alston, Jr., et al.

Independent claim 19 recites a method of navigating data in a data warehouse stored in a data storage device connected to a computer, comprising: receiving input from a user navigating a plurality of data objects stored in the data warehouse selecting a target data object, said target data object derived from one or more transformations performed on one or more sources of data; selecting the target data object in response to receiving said user input; and providing information about at least one of said one or more sources of data.

Similarly, independent claim 27 recites a computer-readable medium having contents for causing a computer-based information handling system to perform steps for navigating data in a data warehouse stored in a data storage device connected to a computer-based information handling system, the steps comprising: receiving input from a user navigating a plurality of data objects stored in the data warehouse selecting a target data object, said target data object derived by one or more transformations performed on one or more sources of data; selecting the target data object in response to receiving said user input; and providing information about at least one of said one or more sources of data.

Again, Appellant respectfully traverses the rejection of independent claims 19 and 27. It is well-established that to be anticipatory, a reference must disclose each and every claim limitation. Alston fails to disclose each and every element of the rejected claims.

For reasons discussed above in connection with independent claims 1, 7, and 13, the Examiner has not identified in the Alston reference disclosure, teachings, or suggestions of each and every limitation set out in claims 19 and 27. More particularly, nowhere in the Office Action or the Examiner's Answer does the Examiner identify in the Alston patent steps of receiving input from a user navigating a plurality of data objects stored in a data warehouse selecting a target data object, the target data object derived from one or more transformations performed on one or more sources of data. Each of independent claims 19 and 27 include these limitations. Further, the Examiner nowhere in the Office Action or the Examiner's Answer identified in the Alston reference the step of selecting the target data object in response to receiving the user input. Each of independent claims 19 and 27 include these limitations. Lastly, nowhere in the Office Action or the Examiner's Answer has the Examiner identified in the Alston reference the step of providing information about at least one of the one or more sources of data. Each of independent claims 19 and 27 include these limitations.

For at least the above reasons, and those set out above in connection with claims 1-18, appellant respectfully submits that the Alston reference is not anticipatory because it does not disclose each and every element clearly recited in independent claims 19 and 27. Claims 20-26 depend from independent claim 19 and, therefore, include the limitations of claim 19.

Therefore, it is submitted that independent claim 19 and claims 20-26 dependent therefrom and claim 27 are patentably distinct and unobvious in view of Alston. Allowance of claims 19-27 is respectfully requested.

D. Claim 28 is not anticipated by Alston, Jr., et al.

Independent claim 28 recites a system for navigating data in a data warehouse stored in a data storage device connected to a computer-based information handling system, comprising: a plurality of data objects, including a target data object, said target data object derived via one or more transformations performed on one or more sources of data; a transformation lineage system which stores transformation lineage information for the target data object, said transformation lineage information

associating the target data object with said one or more transformations and identifying said one or more data sources; a user interface for receiving user input for selecting a selected one of said plurality of data objects; and said user interface configured to display said transformation lineage information in response to receiving user input selecting said target data object.

For at least the reasons set out above in connection with claims 1-27, Appellant respectfully submits that the Alston patent is not an anticipatory reference against independent claim 28 because it does not disclose each and every claim limitation. Further, the Examiner has not identified in the Alston reference teachings of each and every limitation set out in independent claim 28.

More particularly, nowhere in the Office Action or the Examiner's Answer has the Examiner identified a system for navigating data in a data warehouse stored in a data storage device connected to a computer-based information handling system including a plurality of data objects, including a target data object derived via one or more transformations performed on one or more sources of data. The Examiner has not identified in Alston a system including a transformation lineage system which stores transformation lineage information for the target data object, the transformation lineage information associating the target data object with the one or more transformations and identifying the one or more data sources. Further, the Examiner has not identified in the Alston patent a teaching in a system as set out in claim 28 a user interface for receiving user input for selecting a selected one of the plurality of data objects. Lastly, the Examiner has not identified in Alston the claim limitation of the user interface being configured to display the transformation lineage information in response to receiving user input selecting the target data object.

According to the above, therefore and for reasons set out in connection with claims 1-27, it is respectfully submitted that the Alston patent fails to disclose each and every element of the rejected claim 28. Accordingly, the Alston patent is not an anticipatory reference against that claim.

Allowance of claim 28 is respectfully requested.

VIII. CLAIMS APPENDIX

The status of the claims is as follows after the Response to the Final Office Action:

1. (Previously Presented) A method of navigating data stored on a data storage device connected to a computer, comprising the steps of:

in response to receiving input from a user navigating a plurality of data objects stored in an information catalog, selecting a target data object in the information catalog; and

providing information about source data from which the target data object was derived via a transformation performed on said source data to derive said target data object.

2. (Previously Presented) The method of claim 1, wherein the target data object is represented as a node in a tree structure.

3. (Previously Presented) The method of claim 1, wherein the step of providing information further includes providing transformation information, said transformation information comprising information about a transformation performed on said source data to derive said target data object.

4. (Previously presented) The method of claim 3, wherein the step of providing said transformation information further comprises identifying a transformation producing function used to transform said source data.

5. (Previously presented) The method of claim 1, wherein the step of providing said information further comprises providing lineage information which identifies said source data.

6. (Previously Presented) The method of claim 5, further comprising the step of maintaining transformation models for use in providing the lineage information, said transformation models maintaining information about the source data of the target data object.

7. (Previously Presented) An apparatus for navigating data, comprising:

a computer having a memory and a data storage device coupled thereto that stores the data in an information catalog;

one or more computer programs, performed by the computer, for, in response to receiving input from a user navigating the data stored in the information catalog, selecting a target data object stored in the information catalog and providing information about source data from which the target data object was derived via a transformation performed on said source data.

8. (Previously Presented) The apparatus of claim 7, wherein the target data object is represented as a node in a tree structure.

9. (Previously Presented) The apparatus of claim 7, wherein said one or more computer programs comprise means for providing transformation information, said transformation information comprising information about a transformation performed on said source data to derive said target data object.

10. (Previously Presented) The apparatus of claim 9, wherein the transformation information identifies a transformation producing function used to transform said source.

11. (Previously Presented) The apparatus of claim 7, wherein said one or more computer programs comprise means for providing lineage information which identifies said source data.

12. (Previously Presented) The apparatus of claim 11, further comprising means for maintaining transformation models for use in providing the lineage information, said transformation models maintaining information about the source data of the target data object.

13. (Previously Presented) An article of manufacture comprising a program storage medium readable by a computer and embodying one or more instructions executable by the computer to perform method steps for navigating data stored in an information catalog on a data storage device, the method comprising:

in response to receiving input from a user navigating a plurality of data objects stored in the information catalog, selecting a target data object stored in the information catalog, the target data object being derived by a transformation performed on source data; and

providing information about the source data from which the target data object was derived.

14. (Previously Presented) The article of manufacture of claim 13, wherein the target data object is represented as a node in a tree structure.

15. (Previously Presented) The article of manufacture of claim 13, wherein the step of providing information further comprises providing transformation information, said transformation information comprising information about a transformation performed on said source data to derive said target data object.

16. (Previously presented) The article of manufacture of claim 15, wherein the step of providing transformation information further comprises identifying a transformation producing function used to transform said data source.

17. (Previously presented) The article of manufacture of claim 13, wherein the step of providing said information further comprises providing lineage information which identifies said source data.

18. (Previously Presented) The article of manufacture of claim 17, wherein said method further comprises the step of maintaining transformation models for use in providing the lineage information, said transformation models maintaining information about the source data of the target data object.

19. (Previously Presented) A method of navigating data in a data warehouse stored in a data storage device connected to a computer, comprising:

receiving input from a user navigating a plurality of data objects stored in the data warehouse selecting a target data object, said target data object derived from one or more transformations performed on one or more sources of data;

selecting the target data object in response to receiving said user input; and

providing information about at least one of said one or more sources of data.

20. (Previously Presented) The method of claim 19, wherein the target data object is represented as a node in a tree structure.

21. (Previously Presented) The method of claim 19, wherein said information is represented as a node in a tree structure.

22. (Previously Presented) The method of claim 19, wherein said information comprises information about at least one of said one or more transformations performed on said one or more sources of data to derive said target data object.

23. (Previously Presented) The method of claim 22, wherein said information identifies a transformation producing function used by at least one of said one or more transformations.

24. (Previously Presented) The method of claim 22, wherein said information identifies program logic for at least one of said one or more transformations.

25. (Previously Presented) The method of claim 19, wherein said information comprises lineage information which identifies at least one of said one or more sources.

26. (Previously Presented) The method of claim 25, further comprising maintaining one or more transformation models for providing said lineage information, said one or more transformation models maintaining information about said one or more sources of data.

27. (Previously Presented) A computer-readable medium having contents for causing a computer-based information handling system to perform steps for navigating data in a data warehouse stored in a data storage device connected to a computer-based information handling system, the steps comprising:

receiving input from a user navigating a plurality of data objects stored in the data warehouse selecting a target data object, said target data object derived by one or more transformations performed on one or more sources of data;

selecting the target data object in response to receiving said user input; and

providing information about at least one of said one or more sources of data.

28. (Previously Presented) A system for navigating data in a data warehouse stored in a data storage device connected to a computer-based information handling system, comprising:

a plurality of data objects, including a target data object, said target data object derived via one or more transformations performed on one or more sources of data;

a transformation lineage system which stores transformation lineage information for the target data object, said transformation lineage information associating the target data object with said one or more transformations and identifying said one or more data sources;

a user interface for receiving user input for selecting a selected one of said plurality of data objects; and

said user interface configured to display said transformation lineage information in response to receiving user input selecting said target data object.

IX. EVIDENCE APPENDIX

None

X. RELATED PROCEEDINGS APPENDIX

None

CONCLUSION

For at least the above reasons, Appellant respectfully submits that all pending claims are novel, patentably distinct and unobvious over the references of record.

Allowance of all claims and early notice to that effect is respectfully requested.

Respectfully submitted,

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September 27, 2007